

Controller of Examination
University of Malakand

BS 4th Year
Semester-VIII (ANALYTICAL CHEMISTRY)

Paper-V

Course Title: NUCLEAR ANALYTICAL TECHNIQUES

Course Code: CHEM-485

Credit Hours: 3

Course Objectives:

Students will acquire knowledge about different nuclear analytical techniques with special emphasis on the theoretical, instrumental and applications

Course Contents:

Radiotracer techniques, choice of radiotracers, factors affecting choice of radiotracers, isotope dilution analysis (IDA), principle and equation, instrumentation, applications, advantages and limitations, sub-stoichiometric isotope dilution analysis (SIDA), activation analysis (AA), principle of NAA, neutron sources, interferences, sensitivity and detection limits, classification, instrumentation, applications, advantages and limitations, comparison of NAA and IDA with other methods, radiometric titrations (RT), procedure, advantages and limitations, radio chromatography and radioimmunoassay.

Recommended Books:

1. Friedlander, G., Kennedy, J. W., Macias, E. S. and Miller. M. J., Nuclear and Radiochemistry, 3rd ed., Wiley, New York, (1981).
2. Arnikan, H. J., Essentials of Nuclear Chemistry, 4th ed., New Age International Pvt. Ltd. (1995)
3. Naqvi, I. I., Farrukh, M. A, Radiotracers in Chemical Applications: Radiochemistry, VDM Verlag Dr. Muller, (2010).



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